

## Europäisches Patentamt European Patent Office Office européen des brevets



11) Publication number:

0 372 842 A3

## (12)

## **EUROPEAN PATENT APPLICATION**

(1) Application number: 89312533.6

(1) Int. Ci.5 HO3K 17/08, HO3K 17/22

2 Date of filing: 30.11.89

Priority: 02.12.88 JP 306633/88 24.12.88 JP 327067/88 21.09.89 JP 247473/89

- Date of publication of application:13.06.90 Bulletin 90/24
- Designated Contracting States:
  DE FR GB
- Date of deferred publication of the search report: 27,03.91 Bulletin 91/13
- Applicant: MITSUBISHI DENKI KABUSHIKI KAISHA 2-3, Marunouchi 2-chome Chiyoda-ku Tokyo(JP)
- Inventor: Suda, Shinji c/o Mitsubishi Denki K.K.

Kitaitami Seisakusho 1 Mizuhara 4-chome Itami-shi Hyogo-ken(JP)

Inventor: Kobayashi, Hiroshi c/o Mitsubishi Denki K.K.

Kitaltami Selsakusho 1 Mizuhara 4-chome Itami-shi Hyogo-ken(JP)

Inventor: Hongo, Katsunobu c/o Mitsubishi Denki K.K.

Kitaitami Seisakusho 1 Mizuhara 4-chome Itami-shi Hyogo-ken(JP)

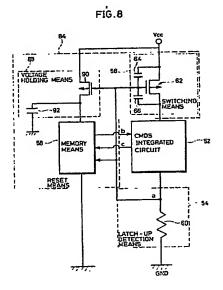
Inventor: Nakao, Hiroyuki c/o Mitsubishi Denki

Kitaitami Seisakusho 1 Mizuhara 4-chome Itami-shi Hyogo-ken(JP)

Representative: Beresford, Keith Denis Lewis et al BERESFORD & Co. 2-5 Warwick Court High Holborn

London WC1R 5DJ(GB)

- Complementary circuit device returnable to normal operation from latch-up phenomenon.
- A complementary circuit device which cancels a latch-up phenomenon to return to normal operation includes a complementary circuit (52), a latch-up detection circuit (54) and a reset circuit (84). The complementary circuit (52), which is normally started from a prescribed state in response to initial power supply, may be erroneously started when the same is resupplied with power immediately after occurrence of a latch-up phenomenon. The latch-up detection circuit (54) detects a latch-up phenomenon occurring in the complementary circuit (52). The reset circuit resets the complementary circuit (52) from the prescribed state in response to an output from the latch-up detection circuit (54). The complementary circuit (52) is reset from the prescribed state similarly to the case of initial power supply, whereby the same is normally started to return to its operation also upon cancellation of the latch-up phenomenon.





## EUROPEAN SEARCH REPORT

Application Number

EP 89 31 2533

DOCUMENTS CONSIDERED TO BE RELEVANT				
ategory	Citation of document with	indication, where appropriato, nt passages	Rele to c	
х	DD-A-2 605 93 (VEB FORS	CHUNGSZENTRUM)	1	H 03 K 17/08 H 03 K 17/22
V	_		2-18	
Y	GB-B-2 120 427 (NISSAN N * Page 3, line 20 - page 4b, li		2-18	L Company of the Comp
Α	US-A-4 594 633 (TOWNSE	ND et al.)		
D,A	PATENT ABSTRACTS OF J. 26th March 1985; & JP-A-59 202 659 (TOSHIB		04),	
		•		TECHNICAL FIELDS SEARCHED (Int. Cl.5)
				H 03 K H 02 H G 06 F
		for all plains		
	The present search report has i			Evenines
	Place of search The Hague	Date of completion of search 27 December 90		SEGAERT P.A.O.M.P.
Y A O	CATEGORY OF CITED DOCT  : particularly relevant if taken alone : particularly relevant if combined wit document of the same catagory : technological background : non-written disciosure : intermediate document : theory or principle underlying the in	h another	the filing do D: document o L: document o	ent document, but published on, or after tate cited in the application cited for other reasons the same patent family, corresponding